

FIG. 1

10 PROBE
12 TRANSMITTING/RECEIVING SECTION
17 B IMAGE CONSTRUCTING SECTION
19 DOPPLER IMAGE CONSTRUCTING SECTION
21 CFM CONSTRUCTING SECTION
22 JUDGING SECTION
23 SYNTHESIZING SECTION
25 DISPLAY SECTION
30 OPERATION CONSOLE
26 CONTROL SECTION

FIG. 2

13 B IMAGE JUDGING UNIT
14 DOPPLER SIGNAL JUDGING UNIT
15 CFM JUDGING UNIT

FIG. 3

12 TRANSMITTING/RECEIVING SECTION
17 B IMAGE CONSTRUCTING SECTION
23 DATA EXTRACTING UNIT
26 CONTROL SECTION
32 IMAGE MEMORY
33 VARIANCE JUDGING UNIT

FIG. 4

TIME

FIG. 5

BRIGHTNESS

VARIATION IN BRIGHTNESS

FRAME

FIG. 6

START

101 DETECT THAT PROBE IS LEFT IN THE AIR

YES

NO

102 SET FREEZE TIME (T1)

103 DISPLAY WARNING ON MONITOR

104 INPUT COMMAND FROM OPERATION CONSOLE

YES

YES

YES

INITIALIZE TIMER

105 HAS REMAINING TIME OF STANDBY TIME (T2) REACHED ZERO?

106 FREEZE PROCESSING

107 INPUT COMMAND FROM OPERATION CONSOLE

YES

NO

108 RELEASE FREEZE

FIG. 7 (A)

ULTRASONIC WAVE DIAGNOSIS TIME (T1)

LEFT-IN-THE-AIR DETECTION (Ta)

STANDBY TIME (T2)

START OF FREEZE (Tb)

FREEZE CONTINUANCE TIME (T3)

RESTORATION PROCESSING (Tc)

ULTRASONIC WAVE DIAGNOSIS TIME (T4)

FIG. 7 (B)

ULTRASONIC WAVE DIAGNOSIS TIME (T1)

LEFT-IN-THE-AIR DETECTION (Ta)

STANDBY TIME (T2)

SETTING CHANGE (Td)

SAVE TIME (U3)

RESTORATION PROCESSING (Tc)

ULTRASONIC WAVE DIAGNOSIS TIME (T4)

FIG. 8

12 TRANSMITTING/RECEIVING SECTION

19 DOPPLER IMAGE CONSTRUCTING SECTION

26 CONTROL SECTION

34-1 IMAGE MEMORY

35 VARIANCE JUDGING UNIT

FIG. 9

VARIANCE

THRESHOLD

FRAME

FIG. 10

12 TRANSMITTING/RECEIVING SECTION

21 CFM CONSTRUCTING SECTION

26 CONTROL SECTION

36 IMAGE MEMORY

37 VARIANCE JUDGING UNIT

FIG. 11

US SCREEN

FREEZE WILL BEGIN IN "X" SECONDS.

DISPLAY WARNING IN JAPANESE OR FOREIGN LANGUAGE. AUTOMATICALLY
REDUCE THE NUMERICAL VALUE OF "X".

FIG. 12

US SCREEN

IMAGE QUALITY WILL CHANGE IN "X" SECONDS.

CAUSE CHARACTERS TO BLINK, INCREASE SIZE, AND DISPLAY NEW SYMBOL
WHEN REMAINING TIME HAS BECOME SHORT.

ATTENTION

IMAGE QUALITY WILL CHANGE IN "X" SECONDS.

FIG. 13

12 TRANSMITTING/RECEIVING SECTION
26 CONTROL SECTION
72 IMAGE MEMORY
74 COMPARISON REFERENCE DATA MEMORY
76 JUDGING CIRCUIT

FIG. 14

START

200 LEFT-IN-THE-AIR MONITOR MODE INTERRUPTION
201 CHANGE TO INSPECTION MODE (M) SETTING
202 ACQUIRE FRAME IMAGE (F1)
203 READ FRAME IMAGE (F0)
199 ACQUIRE, IN ADVANCE, FRAME IMAGE (F0) IN INSPECTION MODE
(M) WHEN PROBE IS LEFT IN THE AIR
204 JUDGE SAMENESS OF F1 AND F0

MATCH

DIFFERENT

205 DISPLAY WARNING ON MONITOR (E.G., DISPLAY CHARACTER
STRING SUCH AS "FRAME RATE WILL BE LOWERED IN X SECONDS" ON
MONITOR)

INITIALIZE TIMER

104 INPUT COMMAND FROM OPERATION CONSOLE

INPUT FROM SPECIFIC KEY

YES

NO

105 COUNT OF TIMER = SET VALUE

MATCH

DIFFERENT

106-C LOWER FRAME RATE

107 INPUT COMMAND FROM OPERATION CONSOLE

YES

NO

108 RETURN FRAME RATE TO ORIGINAL STATUS

END

FIG. 15

START

300 ACQUIRE TEMPORALLY CONTINUOUS PLURAL IMAGES

301 DETECT TEMPORAL CHANGE IN BRIGHTNESS OF IMAGE FRAMES

THERE IS A CHANGE

THERE IS NO CHANGE

205 DISPLAY WARNING ON MONITOR (E.G., DISPLAY CHARACTER STRING SUCH AS "FRAME RATE WILL BE LOWERED IN X SECONDS" ON MONITOR)

INITIALIZE TIMER

104 INPUT COMMAND FROM OPERATION CONSOLE

INPUT FROM SPECIFIC KEY

YES

NO

105 COUNT OF TIMER = SET VALUE

MATCH

DIFFERENT

106-C LOWER FRAME RATE

302 ACQUIRE TEMPORALLY CONTINUOUS PLURAL IMAGES

303 DETECT CHANGE IN IMAGE OR INPUT FROM OPERATION CONSOLE

YES

NO

108 RETURN FRAME RATE TO ORIGINAL STATUS

END

FIG. 16

12 TRANSMITTING/RECEIVING SECTION

26 CONTROL SECTION

62 COMPUTATION PROCESSING CIRCUIT

63 FRAME MEMORY